

**WHAT IS CLAIMED IS:**

14. A power conversion device capable of receiving either an AC input voltage or a DC input voltage and generating a programmable DC output voltage,  
5 said device comprising :

a first circuit converting an AC input voltage to a predetermined DC first output voltage;

a second circuit converting a DC input voltage to a predetermined DC output voltage; and

- 10 a third circuit receiving said first and second predetermined DC voltages from first and second circuits and generating a selectable output DC voltage.

15 15. The device as recited in claim 14 wherein said first circuit includes a switching device, wherein said switching device is an AC line switcher.

16. The device as recited in claim 14 wherein said second circuit includes a DC-to-DC up converter, said up converter receiving said DC input voltage and producing a second predetermined DC output voltage.

17. The device as recited in claim 14 wherein said third circuit includes a DC-to-DC down converter providing a selectable output DC voltage.

- 20 18. The device as recited in claim 14 wherein said first and second predetermined voltages provided by said first and second circuit are generally the same value and are provided to a common node feeding said third circuit.

19. The device as recited in claim 17 wherein said selectable output DC voltage can be set to be higher than said input DC voltage.

20. The device as recited in claim 14 wherein said third circuit is adapted to couple to a plurality of removable programming keys, said keys  
5 providing different associated DC output voltages.

21. The device as recited in claim 20 wherein said key is a resistor, said predetermined DC output voltage being a function of said resistor value.

22. The device as recited in claim 20 wherein said key establishes an output current limiting function.

10 23. The device as recited in claim 20 wherein said key establishes an over-voltage protection function.

24. The device as recited in claim 20 wherein said key establishes a output voltage function.

25. The device as recited in claim 20 wherein said key establishes a  
15 wrong-tip function.

26. The device as recited in claim 14 wherein said third circuit includes a thermal-protection function.

27. The device as recited in claim 14 wherein said DC output voltage provided by said third circuit is between 3VDC and 24VDC.

20 28. The device as recited in claim 17 wherein said up-converter and said down-converter are coupled in a master/slave configuration.

29. The device as recited in claim 28 wherein said up-converter and said down-converter are configured in a standard boost/buck topology.

37. (New) The device as specified in Claim 17 wherein the DC-to-DC up-converter and the DC-to-DC down-converter are both switching converters.

5 38. (New) The device as specified in Claim 28 wherein said up-converter and said down-converter operate at the same frequency.

39. (New) The device as specified in Claim 27 wherein said second circuit is adapted to accept said DC input voltage between 11 VDC and 16 VDC.

40. (New) The device as specified in Claim 21 wherein said resistor is  
10 housed in a plug-in module.